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09/751,332	12/28/2000	Darwin A. Engwer	3239P069	7669

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

ELALLAM, AHMED

ART UNIT PAPER NUMBER

2616

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/751,332	Applicant(s) ENGWER ET AL.	
	Examiner AHMED ELALLAM	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-40 and 42-69 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 37-40 and 42-69 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/5/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is responsive to Amendment filed on 5/5/2006. The Amendment has been entered.

Claims 37-40, 42-69 are pending.

Claim Objections

1. Claims 57, 66 and 67 are objected to because of the following informalities:

In claims 57, 66 and 67, the phrase "the first group" lack antecedent basis.

Appropriate correction is required.

Information Disclosure Statement

2. The information disclosure statement filed April 09/2001 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 40, 51, 60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 40, 51, and 60, the specification as original filed does not describe the feature of "transmission error factor is a value being a function of (i) a number of transmission errors occurring successively multiplied by a first weighting factor and (ii) a number of transmission errors occurring sporadically multiplied by a second weighing factor". The specification as originally filed does not disclose a number of transmission errors occurring successively multiplied by a first weighting factor and a number of transmission errors occurring sporadically multiplied by a second weighing factor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 37-39, 41-45, 48-50, 52-55, 57-59, 61-64, and 66-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US 5,889,772) in view of Sindhushayana et al, (US 6,064,678). Hereinafter referred to as Fisher and Sindhushayana respectively.

Regarding claims 37, 48, 57, 66, and 67, Fischer discloses a method (col 5 lines 11-14), means (col 5 lines 34-46), and logic circuit (inherent; the controller of figure 6 must require logic to execute) of automatically adjusting a fragmentation threshold for data transmissions between an access point ("WLAN controller 100, figure 6; col 7 lines 33-46) and one or more associated wireless units (Wireless LAN stations; col 7 lines 40-46) via a wireless medium associated with a wireless network system including a wired backbone network, comprising:

determining a transmission error factor indicative of errors occurring in the transmission of one or more data packets between said access point and said one or more associated wireless units (calculate a ratio of packet-fails count to packet-transmitted (BER) between transmission and destination station; For example see col 12 lines 6-20)., and

automatically adjusting said fragmentation threshold based on said transmission error factor (Based on the BER ratio, the monitor and adjust unit 112 adjusts the fragmentation threshold level; col 12 lines 14-18), where the one or more data packets each have a finite time duration (the BER is based on the time intervals of packets transmitted and acknowledgement messages received. The importance on timely reception of these packets signifies a time duration for each packet; col 11 lines 20-31),

Fischer discloses the transmission error factor being weighted value with transmission errors occurring successively having a different (greater as in claim 37) weighting than transmission errors occurring sporadically (the fragmentation threshold is adjusted based on the bit error rate factor of the current data transmission between 2 stations. A burst of concentrated transmission errors would thereby increase the bit error rate more so than sporadic transmission errors; col 12 lines 7-20),

Fisher does not explicitly disclose translating a desired finite time duration for transmission into the fragmentation threshold based on a data transmission rate of at least one data packet. (Examiner interpreted this limitation in accordance with the specification in which it is stated that the time duration of a data packet is given by the size of the packet divided by the data rate, see page 19, lines 28-30, thus such limitation is interpreted to mean that the fragmentation threshold is chosen based on a predetermined data transmission rate).

Sindhushayana discloses choosing packet lengths (fragmentation threshold) in accordance with data transmission rates. See column 2, lines 55-65.

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made enhance the fragmentation threshold selection of Fisher with a corresponding data transmission rate as taught by Sindhushayana so that the optimal fragmentation threshold can be used (optimal data packet length). The advantage would be the ability to maximize the throughput of the system by choosing the optimal packet length for each subscriber in transmitting data at an appropriate data rate. See Sindhushayana, column 3, lines 14-29.

Regarding claims 38, 49 and 58, Fischer discloses where determining the transmission error factor comprises transmitting the one or more data packets, and determining the transmission error factor based on a number of acknowledgement packets received in response to the transmitted one or more data packets (the monitor counts the number of failures to receive a ACK frame from each destination address after the frame was transmitted, and keeps this number as the BER fails count; col 11 lines 20-41 and 60-67; also see col 12 lines 1-7).

Regarding claims 39, 50, and 59, Fischer discloses where the transmission error factor depends on a number of errors occurring in the transmission of the one or more data packets for a given time period (the monitor counts the number of failures to receive a ACK frame from each destination address after the frame was transmitted, and keeps this number as the BER; col 11 lines 20-60 and 60-67; also see col 12 lines 1-7).

Regarding claims 52, 61 and 68, Fischer discloses where the transmission error factor is a weighted value with transmission errors occurring successively having a

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greater weighting than transmission errors occurring sporadically (the fragmentation threshold is adjusted based on the bit error rate factor of the current data transmission between 2 stations. A burst of concentrated transmission errors would thereby increase the bit error rate more so than sporadic transmission errors; col 12 lines 7-20)

Regarding claims 42-44, 53, 54, 62 and 63, Fischer discloses where automatically adjusting the fragmentation threshold comprises

comparing the transmission error factor to an upper threshold, and decreasing the fragmentation threshold if the transmission error factor is above the upper threshold (Fischer's embodiment allows the fragmentation threshold to be dynamically adjusted to maximize the WLAN throughput for the current operating conditions. The fragmentation threshold is adjusted according to the bit error rate ratios between a transmitting station and a receiving station. If the BER reaches a certain higher value, the monitor and adjust unit 112 will lower the fragmentation threshold until the packets have a lower rate of error; for example see col 12 lines 7-20 and 42-55);

comparing the transmission error factor to a lower threshold, and increasing the fragmentation threshold if the transmission error factor is below the lower threshold if the BER reaches a certain lower value, it is inherent the monitor and adjust unit 112 will raise the fragmentation threshold until the packets have an acceptable rate of error to maximize throughput; col 3 lines 65-67 and col 4 lines 34-38).

Regarding claims 45, 55, 64 and 69, Fischer discloses automatically adjusting the fragmentation threshold comprises changing the fragmentation threshold by a fixed quantity and by a divisional factor each time the fragmentation threshold is adjusted,

where the fragmentation threshold depends on a pre-determined fragmentation threshold divided by the divisional factor (adjusting the fragmentation threshold level for providing fragmentation of data frames to be transmitted to the first destination station according to the ratio of the incremented count of the failures to the incremented count of the attempts; col 12 lines 6-15).

5. Claims 46, 47, 56 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher in view of Sindhushayana as applied to respective parent claims 37, 48 and 57 above, and further in view of Bird et al (US 6,657,954) hereafter Bird.

Regarding claims 46, 47, 56 and 65, Fischer discloses where the pre-determined fragmentation is related to a maximum packet size for transmission over a wireless network ("wireless local area network"; col 5 lines 1-15).

Fischer in view of Sindhushayana, however, do not explicitly disclose that the wireless network is coupled to a wired backbone network.

Bird discloses a wireless network that uses data flow thresholds to control the transmission of data in the network. The wireless network is coupled to a wired backbone network (figure 2; the wireless connection is connected to workstations connected through a wired network; for example see col 5 lines 50-65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the wireless system of Fischer in view of Sindhushayana to utilize fragmentation thresholds to transmit data through a wired network, as taught by Bird. The motivation would be the ability for a broader and more accessible system

that can communicate globally with many other networks, as explained by Bird in column 5.

Response to Arguments

6. Applicant's arguments filed 5/5/2006 have been fully considered but they are not persuasive:

Specification:

Objections to the specification are withdrawn in view of the amendment.

Claim Rejections under 35 USC § 112:

Applicants Amendment to claims 40, 51, 60 don't overcome the rejections under 112 1st rejections. The specification as originally filed doesn't describe multiplying by a first weighting factor and/or (ii) a second weighing factor for the determination of the transmission factor.

Claims 37-39, 42-45, 48-50, 52-55, 57-59, 61-64 and 66-69:

As to independent claims 48, 57, 66 and 67:

Applicants argue that a prima facie case of obviousness has not been established. Applicants submitted that Fisher nor Sindhushayana, alone or in combination, suggest the limitation of the *"transmission error factor being a weighted value with transmission errors occurring successively having a different weighting than transmission errors experienced by a first group of data packet occurring sporadically"* Emphasis added.

Examiner respectfully disagrees, based on the specification, the limitation Applicants relied upon is merely given as an example as recited in the summary "the

transmission data error can depend greater on transmission errors occurring successively (i.e. clusters of transmission errors) than on errors occurring sporadically”, page 7, lines 12-15, and on page 17 lines 22-page 18 line 6 “ With regard to step 404, there are **many** algorithms that an AP can use to determine the transmission error factor for the purpose of adjusting the fragmentation threshold. For instance, the transmission error factor can be a percentage of data transmission errors that occurred within a given time period. This method, however, may not be desirable because data transmission errors can be common in a system. **A more effective method of determining a transmission error factor is to weigh transmission errors that occur successively (i.e. clusters of transmission errors) greater than those errors that occur sporadically.** If transmission errors occur successively, this indicates that there may be a problem, such as a temporary increase in RF interference, in the wireless medium. Other methods of determining a transmission error factor can be based on an empirical modeling of the wireless channel. There are many other methods of determining a transmission error factor for the purpose of adjusting the fragmentation threshold.”

The passage from the specification (in bold) can be interpreted such that a greater transmission error factor is determined for successive errors, while a smaller transmission error factor is determined for errors occurring sporadically. Such feature is present in the teaching of Fisher, Fisher discloses the fragmentation threshold is adjusted based on the bit error rate factor of the current data transmission between 2 stations. A burst of concentrated transmission errors would thereby increase the bit

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error rate more so than sporadic transmission errors; col 12 lines 7-20; in addition, the fragmentation threshold allocation of Fisher takes account of successive and sporadic errors because of the counting of the occurrence of errors (see page 12, paragraph 3 of the argument). Fisher dynamicity imply that when errors occurs and are counted provide for a "transmission error factor" greater (i.e. weighted) than a transmission error factor for sporadic errors. The example Applicants gave of 100 hundred packet versus 5 errors is clearly understood but not convincing because it doesn't translate to the dynamicity of fragmentation based error count of fisher, fisher doesn't specify adjusting a fragmentation threshold for the original transmission for a hundred packets, but provide for a dynamic fragmentation that is adjustable to the existing network conditions including interference and thus higher successive errors rates as well as during non-interfering periods (sporadic errors). Therefore contrary to Applicant assumption, Fisher teaching explicitly discloses the disputed limitation above.

Claims 45, 55, 64 and 69:

As to the argument with respect to claims 45, 55, 64 and 69 that "Fisher nor Sindhushayana disclose automatic adjustment of the fragmentation threshold that comprises changing the fragmentation threshold by a fixed quantity and by a divisional factor each time the fragmentation threshold is adjusted, and that Fisher only states the monitor and adjust unit adjusts the current fragmentation threshold level. The re is no mention of any divisional factor as claimed". Examiner notes that Fisher discloses adjusting the fragmentation threshold level for providing fragmentation of data frames to be transmitted to the first destination station according to the ratio of the incremented

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count of the failures to the incremented count of the attempts; col 12 lines 6-15. Taking into account such a ratio of the incremented count of the failures to the incremented count of the attempts in adjusting the fragmentation threshold is interpreted as the claimed divisional factor.

Examiner's Interview:

Examiner invites Applicants for a telephone conference for advancing the prosecution in case Applicants disagree with the Examiner's position.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To Doris can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.E
Examiner
Art Unit 2616
7/24/06



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600